CLAIMS

1. Method for representing a sequence of pictures grouped in sets of at least two successive pictures, called GOPs, a textured, meshed three-dimensional model being associated with each of said GOPs,

wherein the three-dimensional model associated with the GOP of level n is represented by means of an irregular mesh taking account of at least one vertex of at least the irregular mesh representing the three-dimensional model associated with the GOP of level n-1, said vertex being called common vertex.

2. Method of representation according to claim 1, wherein at least two consecutive three-dimensional models also have, associated with them, a basic model, built from said vertices common to said at least two three-dimensional models.

3. Method of representation according to any of the claims 1 and 2, wherein the passage from one of said three-dimensional models to another is done by wavelet transformation, using a first set of wavelet coefficients.

4. Method of representation according to any of the claims 1 to 3, wherein one of said three-dimensional models is obtained from said associated basic model by wavelet transformation, using a second set of wavelet coefficients.

5. Method of representation according to any of the claims 1 to 4, wherein said irregular mesh of level n is a two-dimensional irregular mesh of one of the pictures of said GOP of level n.

6. Method of representation according to claim 5, wherein said meshed picture is the first picture of said GOP of level n.

7. Method of representation according to any of the claims 1 to 6, wherein each of said three-dimensional models is obtained by elevation of said irregular mesh representing it.

8. Method of representation according to any of the claims 5 to 7, wherein said irregular two-dimensional mesh is obtained by successive simplifications of a regular triangular mesh of said picture.

9. Method of representation according to any of the claims 5 to 7, wherein said irregular two-dimensional mesh is obtained from a Delaunay mesh of predetermined points of interest of said picture.

10. Method of representation according to any of the claims 1 to 9, wherein two successive GOPs have at least one common picture.

11. Method of representation according to any of the claims 1 to 10, wherein said vertices common to said levels n-1 and n are detected by estimation of motion between the first picture of said GOP of level n-1 and the first picture of said GOP of level n.

12. Method of representation according to claim 11, wherein it includes a step for the storage of said detected common vertices.

13. Method of representation according to any of the claims 1 to 12, wherein said irregular mesh representing said model associated with the GOP of level n also takes account of at least one vertex of at least the irregular mesh representing the model associated with the GOP of level n+1.

14. Method of representation according to any of the claims 4 to 13, wherein said second set of wavelet coefficients is generated by the application of at least one analysis filter on a semi-regular re-meshing of said associated three-dimensional model.

15. Method of representation according to any of the claims 3 to 14, wherein said wavelets are second-generation wavelets.

16. Method of representation according to any of the claims 3 to 15, wherein said wavelets belong to the group comprising:

- piecewise affine wavelets;
- polynomial wavelets;
- wavelets based on the Butterfly subdivision scheme.

17. Signal representing a sequence of pictures grouped in sets of at least two successive pictures called GOPs, a textured, meshed three-dimensional model being associated with each of said GOPs,

wherein it comprises:

- at least one field containing a basic model built from vertices common to at least two irregular meshes, each representing a three-dimensional model, said at least two three-dimensional models being associated with at least two successive GOPs;
- at least one field containing a set of wavelet coefficients used for the construction, by wavelet transformation from said basic model, of at least one three-dimensional model associated with one of said GOPs ;
- at least one field containing at least one texture associated with one of said three-dimensional models;
- at least one field containing at least one camera position parameter.

18. Device for representing a sequence of pictures implementing the representation method of any of the claims 1 to 16.

19. Device for representing a sequence of pictures grouped in sets of at least two successive pictures, called GOPs, a textured, meshed three-dimensional model being associated with each of said GOPs.

wherein it comprises:

- means for the building of said three-dimensional models by wavelet transformation of at least one basic model, prepared from vertices common to at least two irregular meshes representing two successive three-dimensional models;
- means for representing said pictures of the sequence from said three-dimensional models, from at least one picture of texture and from at least one camera position parameter.

20. Device for the encoding of a sequence of pictures grouped in sets of at least two successive pictures, called GOPs, a textured, meshed three-dimensional model being associated with each of said GOPs,

wherein it comprises means for the encoding of a three-dimensional model associated with the GOP of level n, said three-dimensional model being represented by means of an irregular mesh taking account of at least one vertex of

at least one irregular mesh representing the three-dimensional model associated with the GOP of level n-1.